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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,510	10/14/2003	Todd M. Steinmetz	GP-304171	3533

7590

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Leslie Hodges  
General Motors Corporation  
Mail Code: 482-C23-B21, Legal Staff  
P.O. Box 300  
Detroit, MI 48265-3000

EXAMINER

LOUIS JACQUES, JACQUES H

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/686,510

Applicant(s)

STEINMETZ ET AL.

Examiner

Jacques H. Louis-Jacques

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-20 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 21 is/are rejected.
- 7) ☒ Claim(s) 22-27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 10, 2006 has been entered.

***Response to Amendments***

2. The amendments and arguments filed along with the request for continued examination (RCE) have been entered and carefully considered by the examiner.

Applicant has amended claims 1-5, 11-20, and added new claims 22-27.

The claims were rejected under the doctrine of obviousness-type double patenting. In response to such rejection, Applicant submitted, "Applicants are prepared to timely execute a terminal disclaimer to overcome the examiner's rejection." See response at page 11 of 18. However, no such terminal disclaimer has been received to this date. Accordingly, the rejection is sustained until such terminal disclaimer is in fact received and approved by the Office.

Claim 5 is amended into independent form to include the limitations of base claim 1. Accordingly, claim 5 and the claims dependent therefrom are being allowed.

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Upon further consideration of the pending claims in light of Applicant's arguments and the applied prior art references, claims 13-17 and 18-20 are found to recite allowable subject matter. Also, dependent claims 22-27 are being objected to.

Claims 1-4 and 21 are still being rejected. The rejection is set forth below.

The examiner acknowledges and appreciates Applicant's effort to put the present application in better condition for allowance. However, despite such effort, not all the claims meet the conditions to be allowed. As mentioned above, the claims remain rejected under the obviousness-type double patenting. Claims 1-4 and 21 are rendered unpatentable over the applied prior art references.

The basis and rationale for rejecting the above-mentioned claims are set forth below.

### *Specification*

3. The disclosure is objected to because of the following informalities: In paragraphs [0036], [0037], [0052] as amended to provide the corresponding patent application serial numbers, Applicant is suggested to provide the filing dates and the status of these patent applications.

Appropriate correction is required.

### *Claim Objections*

4. Claims 1, 5, 13, 18 are objected to because of the following informalities: Applicant is suggested to add --A-- before "method" (claims 1, 5, 18) and before "mode" (claim 13).

Appropriate correction is required.

***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 and 11-12 of copending Application No. 10/779,558. Although the conflicting claims are not identical, they are not patentably distinct from each other because the mere recitation of the claimed limitations in different formats does not make the claims of the present application patentably distinct over the claims of the abovementioned copending applications. The "neutral mode operation" of the copending application is not needed to carry out the shift control of the present application. It is well settled that the omission of an element, and its function is an obvious expedient if the remaining elements perform the same function as before. *In re Karlson*, 136 USPQ 184 (CCPA 1963). Also note *Ex parte Rainu*, 168 USPQ 375 (Bd. App. 1969). Omission of a reference element of step whose function is not needed would be obvious to one of ordinary skill in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

*Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Muramoto et al [6,351,700].

Muramoto et al discloses a method and apparatus for controlling a mode-to-mode shift in a multi-mode, electro-mechanical transmission (2). See columns 1-2 and column 4, lines 50-55. The transmission, according to Muramoto et al, includes an input member (1) and an output member (4), first and second torque transfer devices (9, 10), at least one motor (36). See figure 2, columns 5-6. Muramoto et al also discloses a plurality of modes (i.e., a multi-mode transmission), wherein a first mode operation is established by simultaneously applying the first torque transfer device and releasing the second torque transfer device, wherein the transmission input member is mechanically coupled to the transmission output member through a continuously variable ratio (column 4); a second mode operation is established by simultaneously releasing first torque transfer device released and applying second torque transfer device, wherein the transmission input member is mechanically coupled to the transmission output member through a continuously variable ratio (columns 4, 8), and a fixed-ratio operation is established by simultaneously applying first and second torque transfer devices applied wherein the transmission input member is mechanically coupled to the transmission output member

through a fixed ratio (column 9). According further to Muramoto et al, there is provided applying the one of the first and second torque transfer devices which is initially in a released state while controlling slip speed thereacross to substantially zero by adjusting motor torque and thereafter releasing the other one of the first and second torque transfer devices which is initially in an applied state while controlling slip speed thereacross to substantially zero by adjusting motor torque. See columns 12, 15 and 17. Additionally, according also to Muramoto et al, controlling slip speed across the torque transfer devices to substantially zero when one of the first and second torque transfer devices is fully applied and when the other one of the first and second torque transfer devices is fully released. See columns 4-6 and 8-9.

9. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Tabata et al [5,833,570].

Tabata et al discloses a vehicle transmission shift control apparatus wherein torque of motor connected to automatic transmission is controlled to reduce shift shock of transmission. Tabata et al discloses an electro-mechanical transmission including an input member and an output member, first and second torque transfer devices, at least one motor. See figure 1, column 8. Tabata et al also discloses for controlling the shifting of transmission through a plurality of modes (i.e., a multi-mode transmission) (columns 3-4), wherein a first mode operation is established by simultaneously applying a first torque transfer device and releasing a second torque transfer device; a second mode operation is established by simultaneously releasing first torque transfer device released and applying second torque transfer device, and a fixed-ratio operation is established by

simultaneously applying first and second torque transfer devices applied wherein the transmission input member is mechanically coupled to the transmission output member through a fixed ratio. See columns 13-14. According to Tabata et al, there is provided a method for controlling shifting a multi-mode transmission by applying an oncoming torque transfer device while controlling slip speed across the oncoming torque transfer device to substantially zero by adjusting motor torque and thereafter releasing an offgoing torque transfer device while controlling slip speed across the offgoing torque transfer device to substantially zero by adjusting motor torque. See columns 15-16, 20-22. According also to Tabata et al, controlling slip speed across the oncoming torque transfer device to substantially zero by adjusting motor torque terminates when the oncoming torque transfer device is fully applied and when the offgoing torque transfer device is fully released. See columns 23-25, 27-28.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muramoto et al, in view of Schmidt [5,931,757].



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Muramoto et al discloses the limitations as set forth above. However, Muramoto et al does not particularly teach that “the at least one motor comprises two electrical motors.” Schmidt, on the other hand, discloses a two-mode, compound-split, electro-mechanical transmission utilizing an input member for receiving power from an engine, and an output member for delivering power from the transmission. Schmidt discloses first and second motor/generators that are operatively connected to an energy storage device through a control for interchanging electrical power among the storage means, the first motor/generator and the second motor/generator. Tabata et al also discloses that the planetary gear arrangements as well as the two motor/generators are disposed coaxially with the planetary gear arrangements located radially inwardly of the motor/generators. The planetary gear arrangements provide two modes, or gear trains, that are selectively available, as by the utilization of only two torque transfer devices, to transmit power from the engine and/or the motor/generators to the output member of the transmission, depending upon the desired, or required, power and/or speed to be delivered by the output shaft. The transmission incorporates at least one mechanical point in its first mode of operation and at least two mechanical points in its second mode of operation. See columns 1 and 2. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the speed change control method and apparatus of Muramoto et al by incorporating the two (plurality) of electrical motors from the two-mode, compound-split electro-mechanical vehicular transmission of Schmidt because such modification would provide a shifting control with improved accuracy and stability

while, according to Schmidt, providing a system that operating at high efficiencies over a wide variety of operating conditions.

12. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al [5,833,570], in view of Schmidt [5,931,757].

Tabata et al discloses the limitations as set forth above. Tabata et al discloses at least one motor and a generator (motor/generator). However, Tabata et al does not particularly disclose "two electrical motors". Schmidt, on the other hand, discloses a two-mode, compound-split, electro-mechanical transmission utilizing an input member for receiving power from an engine, and an output member for delivering power from the transmission. Schmidt discloses first and second motor/generators that are operatively connected to an energy storage device through a control for interchanging electrical power among the storage means, the first motor/generator and the second motor/generator. Tabata et al also discloses that the planetary gear arrangements as well as the two motor/generators are disposed coaxially with the planetary gear arrangements located radially inwardly of the motor/generators. The planetary gear arrangements provide two modes, or gear trains, that are selectively available, as by the utilization of only two torque transfer devices, to transmit power from the engine and/or the motor/generators to the output member of the transmission, depending upon the desired, or required, power and/or speed to be delivered by the output shaft. The transmission incorporates at least one mechanical point in its first mode of operation and at least two mechanical points in its second mode of operation. See columns 1 and 2. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the vehicle transmission shift

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control apparatus of Tabata et al by incorporating the two (plurality) of electrical motors from the two-mode, compound-split electro-mechanical vehicular transmission of Schmidt because such modification would provide a shifting control with improved accuracy and stability while, according to Schmidt, providing a system that operating at high efficiencies over a wide variety of operating conditions.

***Allowable Subject Matter***

13. Claims 5-12, 13-17 and 18-20 are allowed over the prior art of record.
14. Claims 22-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not particularly teach, in combination, that applying the one of the first and second torque transfer devices which is initially in a released state is initiated when a predicted period needed for full torque transfer engagement thereof is substantially equivalent to a predicted period for slip speed thereacross to reach zero.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5,890,392	Ludanek et al	Apr. 1999
6,122,583	Kirchhoffer et al	Sep. 2000
6,575,872	Gluck et al	Jun. 2003

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques H. Louis-Jacques whose telephone number is 571-272-6962. The examiner can normally be reached on M-Th 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacques H Louis-Jacques  
Primary Examiner  
Art Unit 3661

/jlj

*Jacques H. Louis-Jacques*  
JACQUES H. LOUIS-JACQUES  
PRIMARY EXAMINER